

(19)



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(11)

**EP 1 002 744 A1**

(12)

**EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
24.05.2000 Bulletin 2000/21

(51) Int. Cl.<sup>7</sup>: **B65D 83/04, B65D 5/38**

(21) Application number: **99117644.7**

(22) Date of filing: **08.09.1999**

(84) Designated Contracting States:  
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE**  
Designated Extension States:  
**AL LT LV MK RO SI**

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(30) Priority: **18.09.1998 US 157292**

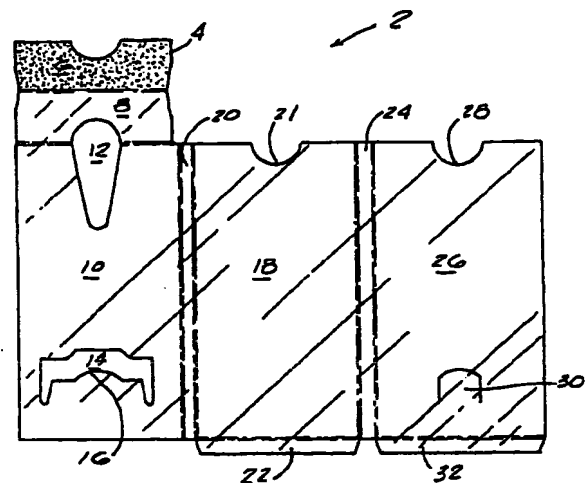
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**(54) Unit dose packaging system (UDPS) having a child resistant locking feature**

(57) This invention relates to a two piece paperboard package (150) that houses a unit dose product (122) on an internal slide card (100) within an outer paperboard shell (50). This package may have one or more internal or external lock(s) that prevent the slide card (100) from being pulled out without triggering some type of lock release mechanism. This package is focused around providing a child resistant, senior-friendly unit dose package that can be opened and closed numerous times and then finally disposed of.



**FIG. 1**

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## Description

### BACKGROUND OF THE INVENTION

#### Field of the Invention

[0001] This invention relates to a two piece paperboard package that houses a unit dose product on an internal slide card within an outer paperboard shell. This package may have one or more internal or external lock(s) that prevent the slide card from being pulled out without triggering some type of lock release mechanism. This package is focused around providing a child resistant, senior- friendly unit dose package that can be opened and closed numerous times and then finally disposed of.

#### Description of the Related Art

[0002] It is known in the tablet dispenser art to employ a container which comprises the housing having an opening in its top wall and a drawer which slidably sits in the housing. Exemplary of such prior art is U.S. Patent No. 5,275,291 ('291) to L. C. Sledge, entitled "Tablet Dispenser". While the '291 reference employs a locking feature, the locking feature for the package relies on the lock forming an upward button which, when the drawer is closed, extends up through the opening into the wall of the housing. Also, it must be pointed out that the button may be pushed when it is in the relief zone. The relief zone is used to stop the slide drawer from being pulled out. By having this option, the user may choose to disable the child resistant feature of the '291 reference prematurely by pushing the button to release the drawer from the outer shell. Therefore, a more advantageous system, then, would be presented if such a button assembly could be eliminated.

[0003] It is apparent from the above that there exists a need in the art for a unit dose packaging system (UDPS) which is able to dispense medications and which at least equals the child resistant characteristics of the known dispensers, but which at the same time eliminates the use of the button release mechanism.

[0004] It is a purpose of this invention to fulfill this and other needs in the art in a manner more apparent to the skilled artisan once given the following disclosure.

### SUMMARY OF THE INVENTION

[0005] Generally speaking, this invention fulfills these needs by providing a unit dose paperboard package having a locking feature, comprising an outer paperboard sleeve and an inner paperboard slide card lockably retained within the outer sleeve, such that the outer sleeve includes a plurality of side panels operatively connected to each other such that one of the plurality of side panels includes an inner slide card retaining means and a first inner slide card releasing

means and another of the plurality of the side panels includes a second inner slide card releasing means and the inner slide card includes a plurality of unit dose dispensing means and an inner slide card retaining/releasing means located substantially adjacent to the unit dose dispensing means.

[0006] In certain preferred embodiments, the inner slide card retaining means are extension panels. Also, the first inner card releasing means includes a cut-out area and a node on one of the side panels. Also, the second inner slide card releasing means includes a release button. Finally, the inner slide card retaining/releasing means includes panel extensions.

[0007] In another further preferred embodiment, the outer sleeve of the package provides additional protection for the inner slide card, which holds the unit dose product being used. The inner slide portion of the package has a stop feature that connects with a catch feature on the outer sleeve to prevent the user from pulling the inner slide completely away from the outer sleeve. Furthermore, the package is focused around providing a child-resistant, senior-friendly unit dose package that can be opened and closed numerous times and then finally disposed of.

[0008] The preferred unit dose package, according to this invention, offers the following advantages: lightness in weight; resistance to tampering; child resistance; senior friendliness; excellent durability; ease of assembly; unit dose protection and excellent economy. In fact, in many of the preferred embodiments, these factors of lightness in weight, tamper resistance, child resistance, senior friendliness, durability, ease of assembly, unit dose protection and economy are optimized to the extent that is considerably higher than heretofore achieved in prior, known unit dose packages.

[0009] The above and other features of the present invention, which will become more apparent as the description proceeds, are best understood by considering the following detailed description in conjunction with the accompanying drawings, wherein like characters represent like parts throughout the several views and in which:

### BRIEF DESCRIPTION OF THE DRAWINGS

#### [0010]

FIGURE 1 is a plan view of an outer sleeve blank for a unit dose paperboard package with a child resistant lock, according to the present invention;

FIGURE 2 is a plan view of the outer sleeve blank of Figure 1 with one of the panels folded, according to the present invention;

FIGURE 3 is a plan view of the outer sleeve blank of Figure 2 with another panel folded, according to the present invention;

FIGURE 4 is a plan view of the outer sleeve blank of Figure 3 with another panel folded, according to

the present invention;

FIGURE 5 is an isometric view of a completely constructed outer sleeve for the unit dose package, according to the present invention;

FIGURE 6 is a plan view of an inner slide card blank for the unit dose package, according to the present invention;

FIGURE 7 is a plan view of the blank for the inner slide card of Figure 6 with one of the panels folded, according to the present invention;

FIGURE 8 is a plan view of the inner slide card blank of Figure 7 with another panel folded, according to the present invention;

FIGURE 9 is a plan view of the inner slide card blank of Figure 8 with one of the panels folded, according to the present invention;

FIGURE 10 is an isometric view of a completely constructed unit dose package with the inner slide card located within the outer sleeve and a tear-away section of package showing the locking feature, according to the present invention; and

FIGURE 11 is a plan view of the inner slide card being pulled out, but lockably retained within the outer sleeve of the unit dose package, according to the present invention.

#### DETAILED DESCRIPTION OF THE INVENTION

[0011] Paperboard is used as a substrate for outer sleeve blank 2 (Figure 1) and inner slide card blank 100 (Figure 6) and is, typically, constructed from a sheet of bleached sulphate, solid unbleached sulphate (SUS) or clay-coated newsback (CCNB). Definitively, the term paperboard describes paper within the thickness range of 0.2 to 0.7 mm (0.008 to 0.028 inches). The invention is relevant to the full scope of such a range, as applied to packaging and beyond.

[0012] When used for unit dose packaging stock, the paperboard is usually clay coated on at least one side surface and occasionally on both sides. The paperboard trade characterizes a paperboard web or sheet that has been clay coated on one side as C1S and C2S for a web coated on both sides. Compositionally, the paperboard coating is a fluidized blend of minerals such as coating clay, calcium carbonate and/or titanium dioxide with starch or adhesive which is smoothly applied to the traveling surface. Successive densification and polishing by calendaring finishes the mineral coated surface to a high degree of smoothness and superior graphic print surface.

[0013] With reference first to Figure 1, there is illustrated an advantageous environment for use of the concepts of this invention. In particular, outer sleeve paperboard blank 2 is illustrated. Blank 2 includes, in part, extension panels 4 and 8, conventional glue area 6, side panels 10, 18 and 26, cut away areas 12 and 14, node 16, side panels 20 and 24, cut outs 21 and 28, end flaps 22 and 32 and release button 30.

[0014] Cut away areas 12 and 14 and cut outs 21 and 28 are constructed by suitable cutting techniques. Release button 30 is cut within panel 26 by conventional techniques.

[0015] As shown in Figure 2, extension 4 is folded over and adhesively attached to panel extension 8 by conventional techniques.

[0016] With respect to Figure 3, extension panel 8 is folded over side panel 10.

[0017] As shown in Figure 4, side panel 10 is folded over side panel 18. Also, as can be seen in Figure 4, side panel 10 includes conventionally applied adhesive area 34.

[0018] As shown in Figure 5, there is illustrated a completely constructed outer sleeve 50 which includes release button 30 and panel extension 4. In this manner, panel extension 4 acts as a stopping device that prevents inner slide card 100 (Figure 9) from being pulled completely out of outer sleeve 50 (Figure 10). In particular, as shown in Figure 8, folded panels 4 and 8 extend down towards side panel 18 to create the stopping device.

[0019] With respect to Figure 6, there is illustrated inner slide card paperboard blank 100. Blank 100 includes, in part, side panels 102 and 104, side panel extensions 106 and 108, conventional unit dose packaging holes 110, conventional unit dose packaging perforated areas 112, panels 114 and 116, side panels 118 and 120 and conventional unit doses 122. Also, it is to be understood that side panels 102, 104, 118 and 120, extensions 106 and 108, and panels 114 and 116 are constructed of the same material as side panel 10 (Figure 1).

[0020] In Figure 7, panels 102 and 118 have been folded over panels 104 and 120, respectively, such that unit doses 122 extend through holes 110 in panels 102 and 118 and unit doses 122 are trapped in holes 110.

[0021] As shown in Figure 8, extension panel 106 is folded over side panel 102.

[0022] As shown in Figure 9, side panel 118 is folded over side panel 102 along panel 114 to complete the structure of inner slide card 100.

[0023] As shown in Figure 10, inner slide card 100 is located within outer sleeve 50.

[0024] Package 150 also includes a locking feature, as previously discussed. The locking feature consists of release button 30, cut away 14, node 16 and extension panels 6 and 8. In this manner, after inner slide card 100 is placed within outer sleeve 50, extension 106 of inner sleeve 100, extends past opening 14 of outer sleeve 50 as shown in Figure 10. Once extension 106 is moved past opening 114, extension 106 springs up and enters into opening 14 and is biased against node 16. Therefore, if the end user attempts to remove inner slide card 100 from outer sleeve 50, extension 106 slides up along opening 14 to prevent the removal of inner slide card 100 from outer sleeve 50. However, in order to deactivate the sliding movement of extension 106 along open-

ing 14, the end user merely has to push release button 30 such that extension 106 is pushed against node 16 and below opening 14, thereby preventing extension 106 from sliding up through opening 14.

[0025] Finally, Figure 11 shows the retaining feature of package 150. After release button 30 has been pushed in order to allow the end user to pull inner slide card 100 from outer sleeve 50, extension 106 interacts with the upper end of sleeve 50 near cut away 28 such that extension 106 is caught and retained by folded over extensions 4 and 8 as shown in Figure 5.

[0026] It is to be understood that the purpose of outer sleeve 50 is to house inner slide card 100. In addition, outer sleeve 50 has one or more release buttons 30 to release extension 106 from opening 14. Also, outer sleeve 50 can be formed using a number of conventional techniques that are standard to the folding carton industry. Finally, package 150 can be sealed by conventional techniques to simulate a tamper evident like presence.

[0027] It is also to be understood that the purpose of inner slide card 100 is to retain unit dose packaging within outer shell 50. Inner slide card 100 allows the end user to gain access to the unit dose product 122 while pulling inner slide card 100 out until it stops, as shown in Figure 11. Folded extensions 4 and 8 are used for two functions in the present invention. First, folded extensions 4 and 8 and extension 106 prevent slide card 100 from being completely removed outer shell 50. The second function is that extension 106 serves as a locking mechanism when the package 150 is in the closed position, as shown in Figure 10.

[0028] Once given the above disclosure, many other features, modifications or improvements will become apparent to the skilled artisan. Such features, modifications or improvements are, therefore, considered to be a part of this invention, the scope of which is to be determined by the following claims.

#### Claims

1. A unit dose paperboard package having a locking feature, wherein said package is comprised of:

an outer paperboard sleeve and an inner paperboard slide card lockably retained within said outer sleeve, such that said outer sleeve includes a plurality of side panels operatively connected to each other such that one of said plurality of side panels includes an inner slide card retaining means and a first inner slide card releasing means and another of said plurality of side panels includes a second inner slide card releasing means; and said inner slide card includes a plurality of unit dose dispensing means and an inner slide card retaining/releasing means located substantially adjacent to said unit dose dispensing means.

2. The package, as in Claim 1, wherein said inner slide card retaining means is further comprised of:

at least one side panel extension hingedly attached to said side panel.

3. The package, as in Claim 1, wherein said first inner slide card releasing means is further comprised of:

a cut-out means; and  
a node means located substantially adjacent to said cut-out means.

4. The package, as in Claim 1, wherein said second inner slide card releasing means is further comprised of:

a release button.

5. The package, as in Claim 1, wherein said inner slide card retaining/releasing means is further comprised of:

a panel extension means.

6. An outer paperboard sleeve blank for a unit dose paperboard package, wherein said blank is comprised of:

a plurality of side panels operatively connected to each other such that one of said plurality of side panels includes an inner slide card retaining means and a first inner slide card releasing means; and  
another of said plurality of side panels includes a second inner slide card releasing means.

7. The outer paperboard sleeve blank, as in Claim 6, wherein said first inner slide card releasing means is further comprised of:

a cut-out means; and  
a node means located substantially adjacent to said cut-out means.

8. The outer paperboard sleeve blank, as in Claim 6, wherein said second inner slide card releasing means is further comprised of:

a release button.

9. An inner paperboard slide card blank for a unit dose paperboard package wherein said blank is comprised of:

a plurality of unit dose dispensing means; and  
an inner slide card retaining/releasing means located substantially adjacent to said unit dose

dispensing means.

10. The inner paperboard slide card blank, as in Claim 9, wherein said inner slide card retaining/releasing means is further comprised of:

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a panel extension means.

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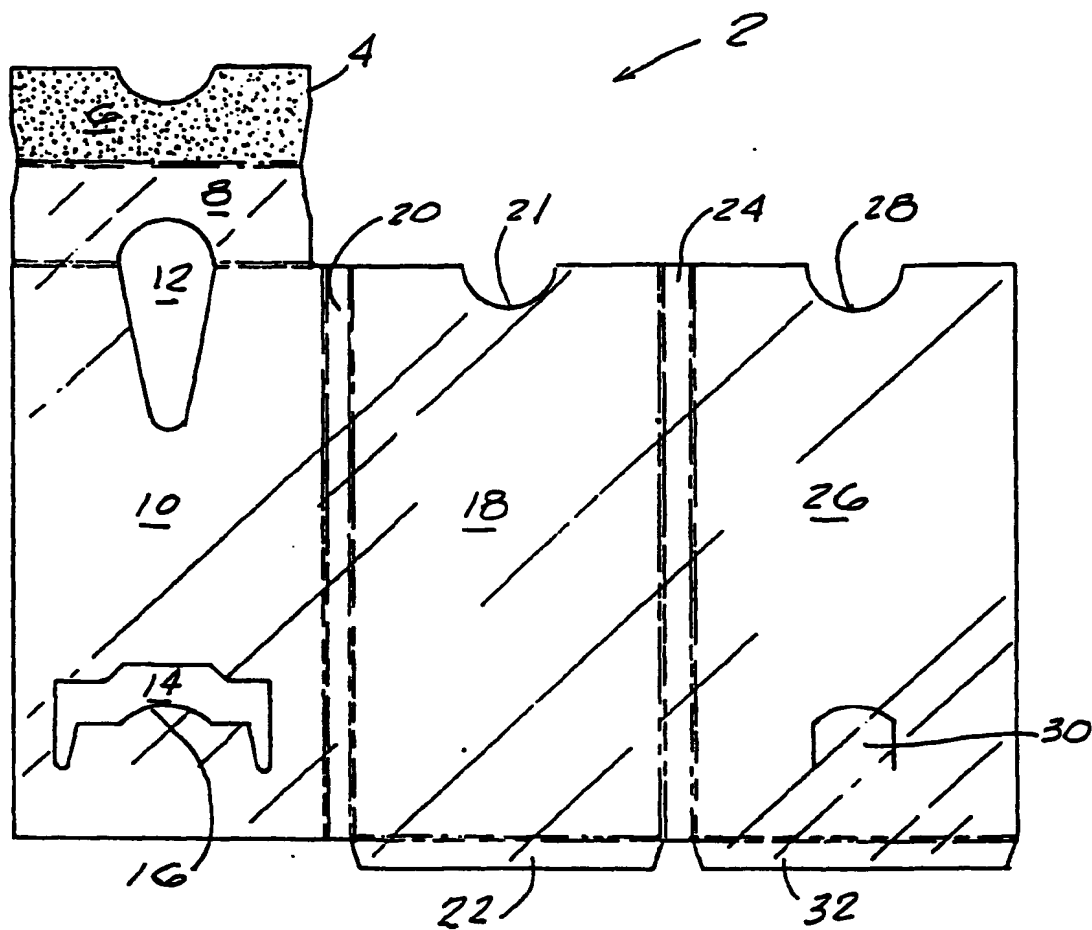


FIG. 1

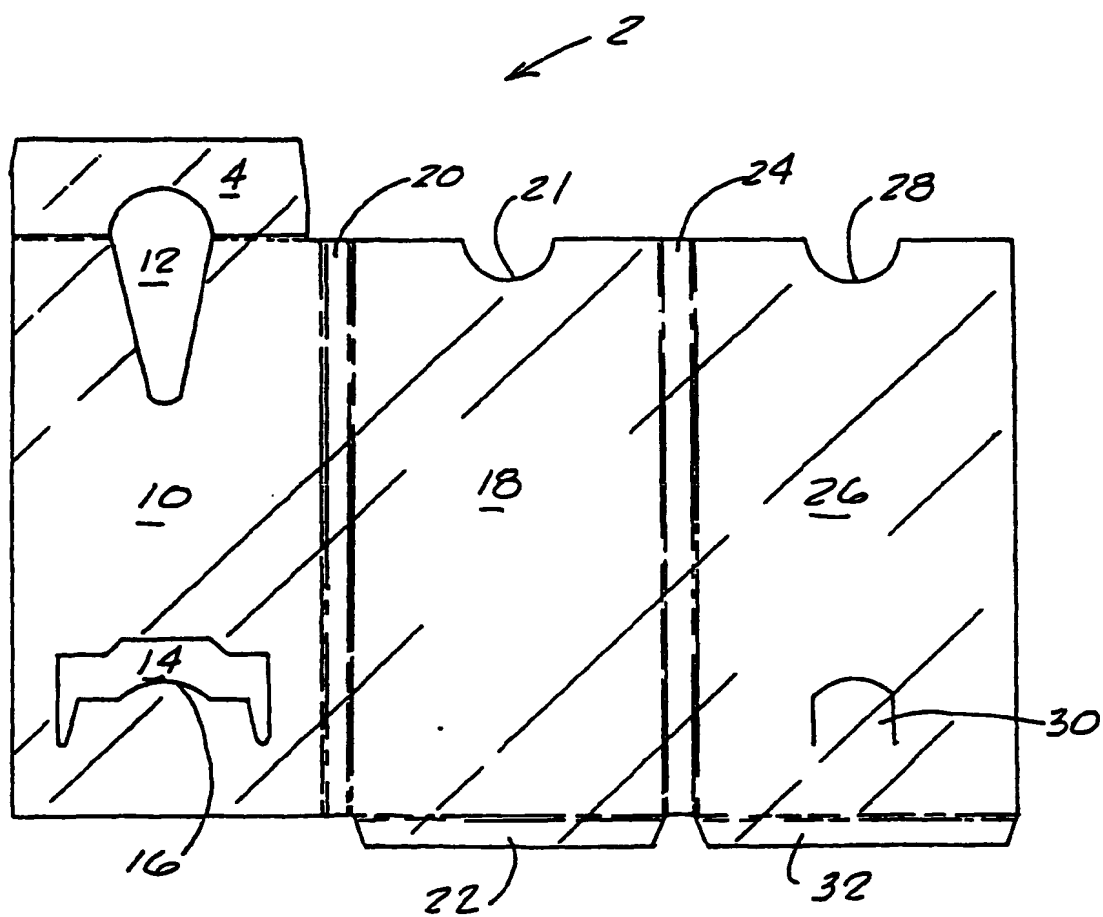


FIG. 2

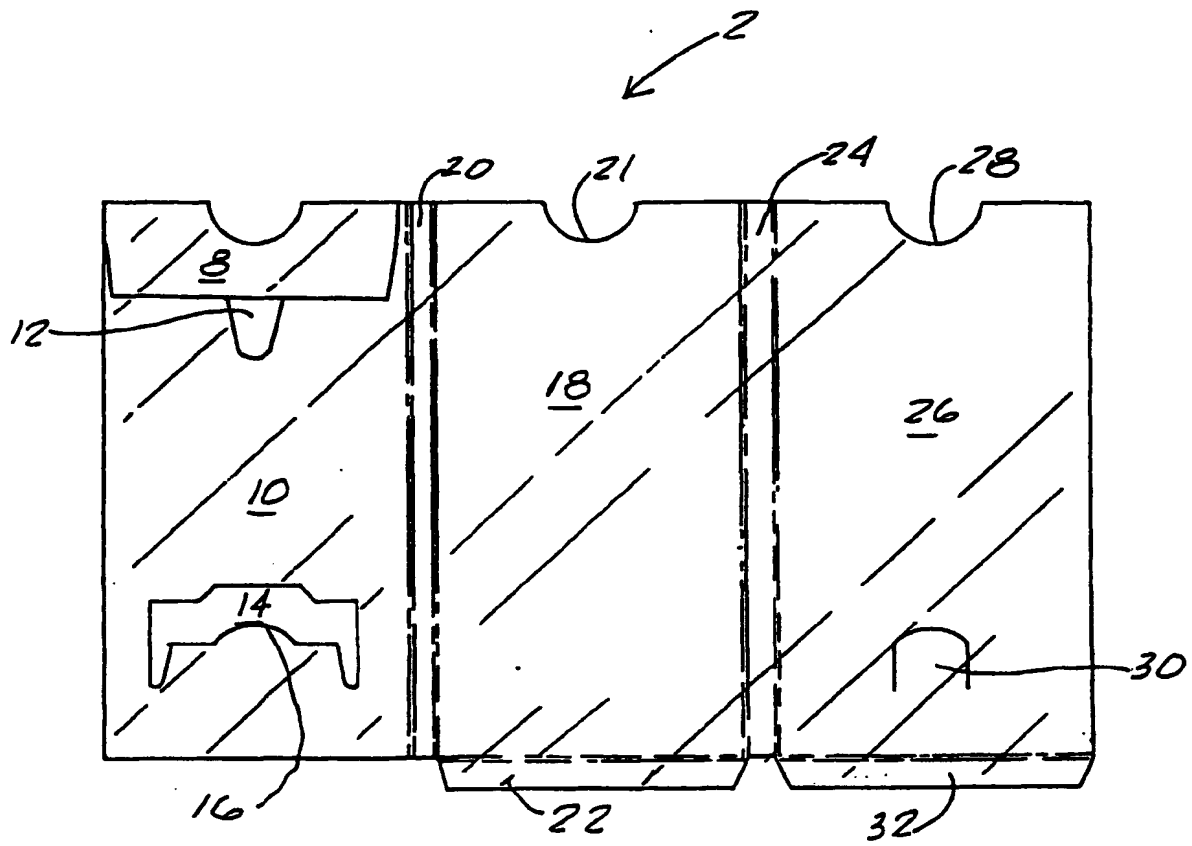


FIG. 3



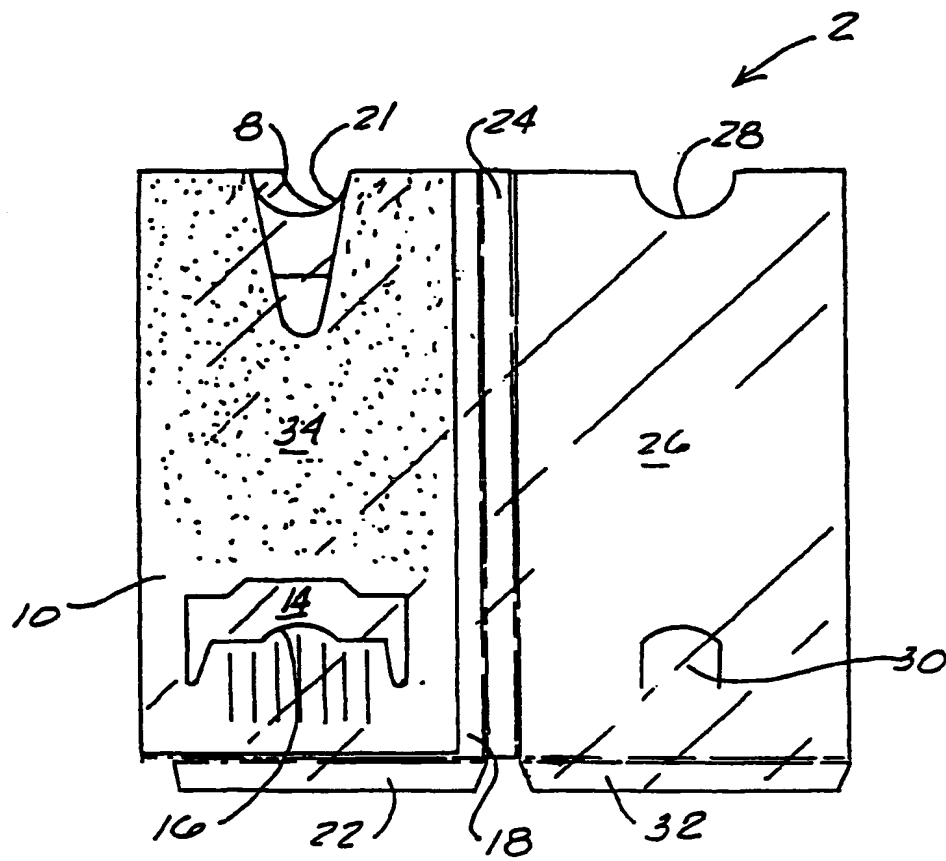


FIG. 4

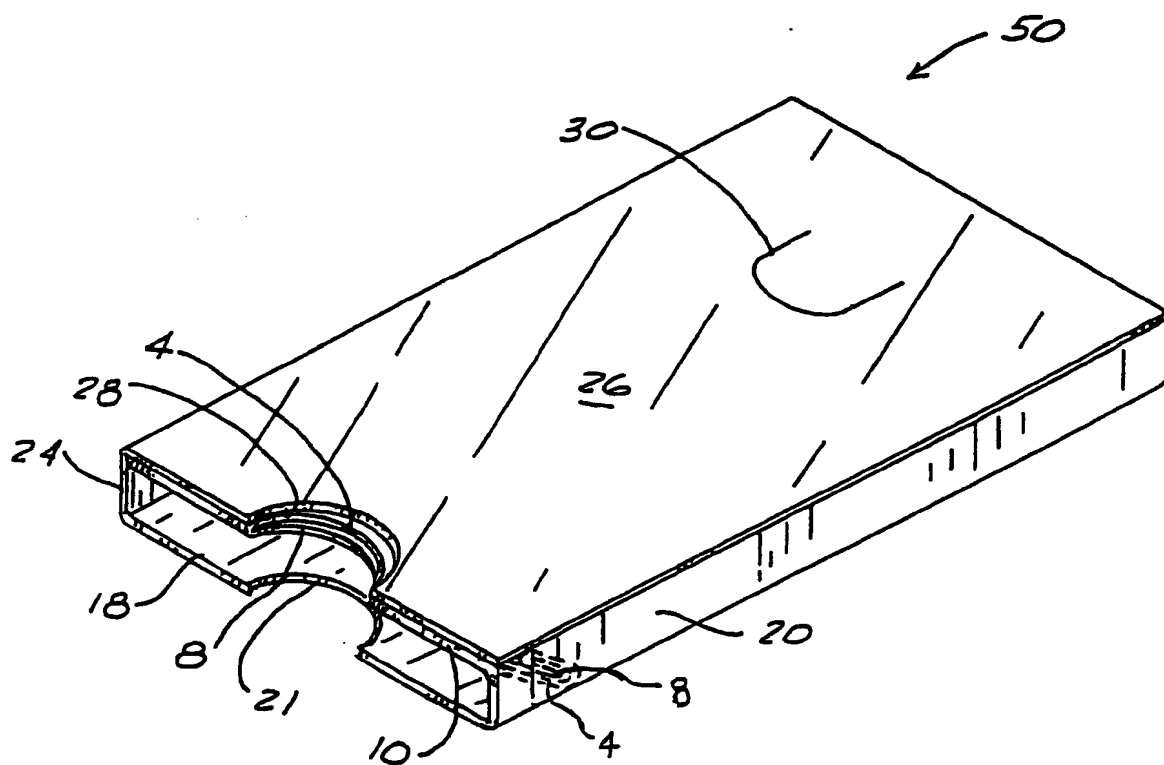


FIG. 5

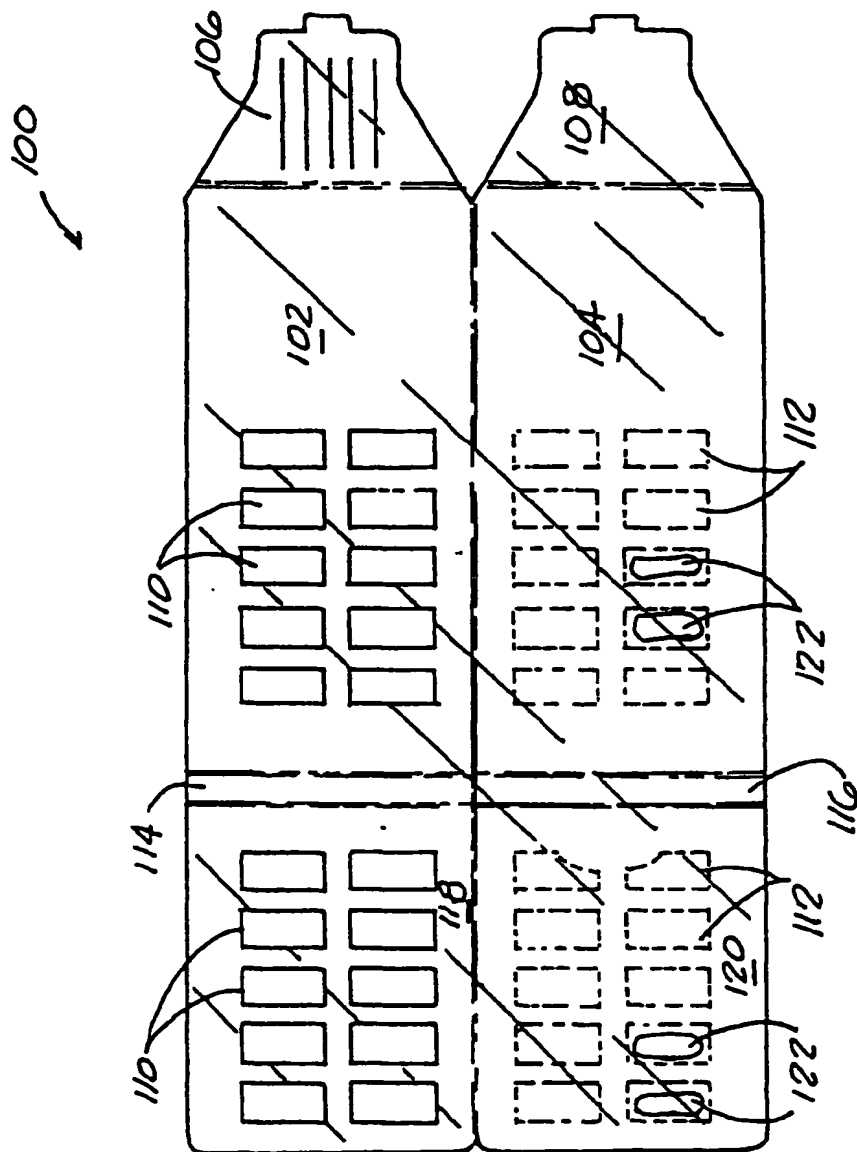


FIG. 6

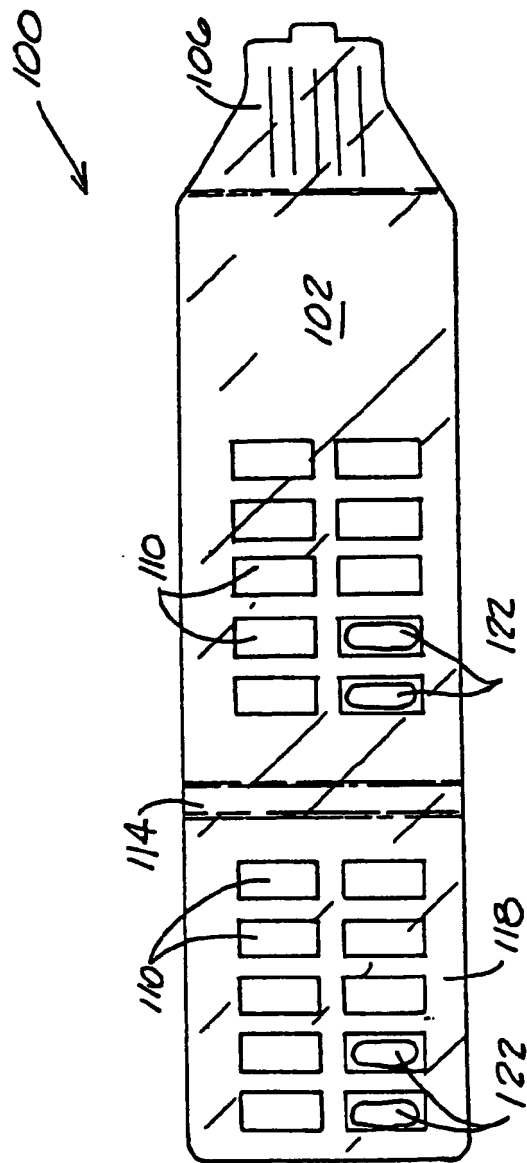


FIG. 7

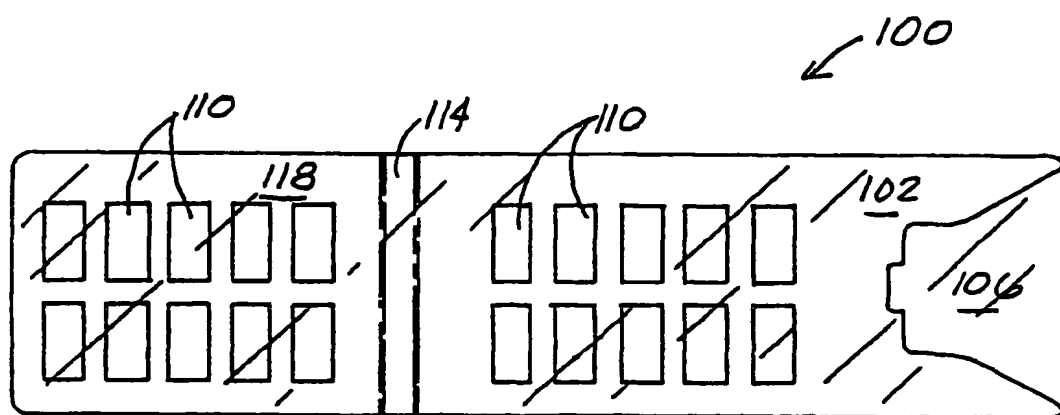


FIG. 8

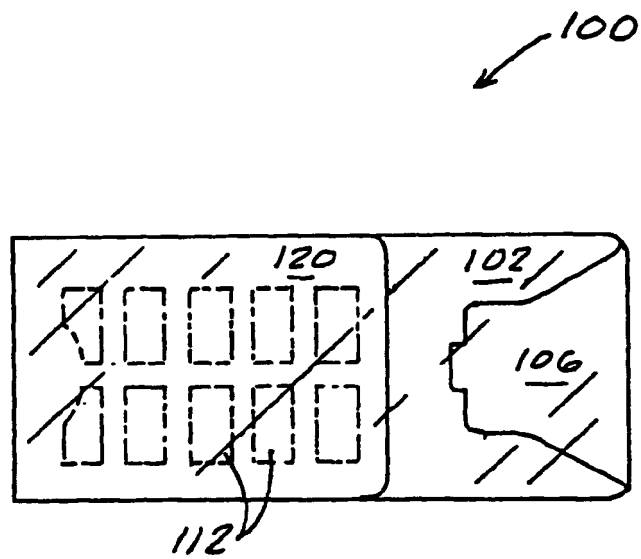


FIG. 9

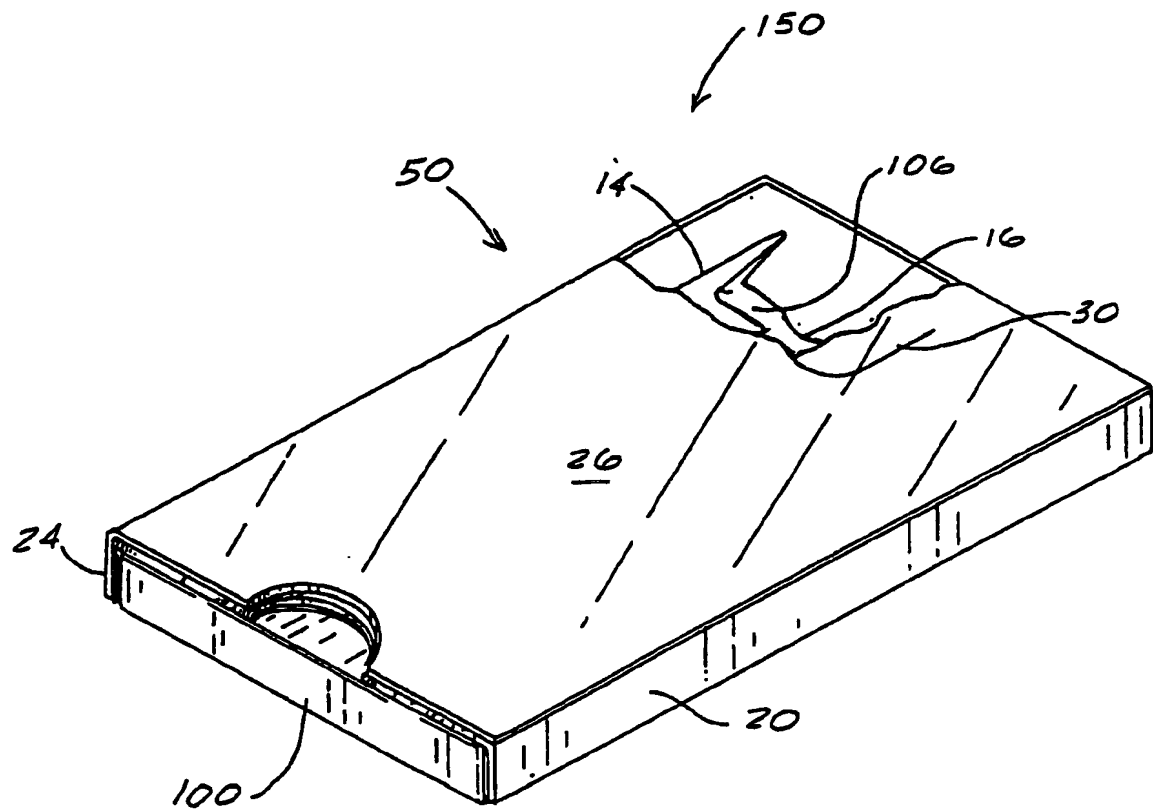


FIG. 10

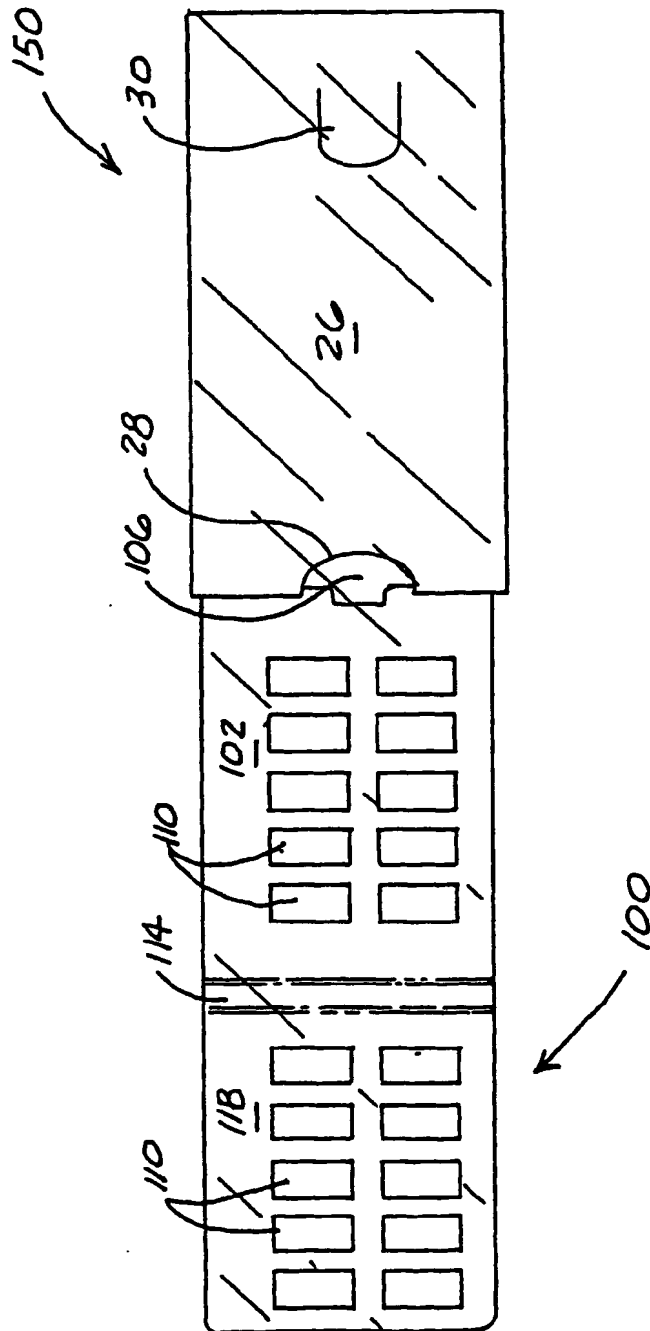


FIG. 11





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# EUROPEAN SEARCH REPORT

Application Number  
EP 99 11 7644

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 2 353 819 A (DUELL) 18 July 1944 (1944-07-18) * the whole document *	1, 6, 9	B65D83/04 B65D5/38
A	US 3 921 804 A (TESTER) 25 November 1975 (1975-11-25)		
D, A	US 5 275 291 A (SLEDGE) 4 January 1994 (1994-01-04)		
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B65D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 15 December 1999	Examiner Martens, L
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 11 7644

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
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15-12-1999

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2353819	A	18-07-1944	NONE	
US 3921804	A	25-11-1975	NONE	
US 5275291	A	04-01-1994	NONE	

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